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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,088	05/30/2006	Tokumi Kobayashi	P30048	1724

52123 7590 11/27/2009  
GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON, VA 20191

EXAMINER
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RAO, SHEELA S

ART UNIT	PAPER NUMBER
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2123

NOTIFICATION DATE	DELIVERY MODE
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11/27/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,088	<b>Applicant(s)</b> KOBAYASHI, TOKUMI	
	<b>Examiner</b> Sheela Rao	<b>Art Unit</b> 2123	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 24,25,27-30,32,33,35,36,38,40,41 and 45-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24,25,27-30,32,33,35,36,38,40,41 and 45-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. This Office action is in response to papers filed on 4 November 2009.
3. Claims 24-25, 27-30, 32-33, 35-36, 38, 40-41 and 45-53 are pending and presented for examination. Claims 1-23, 26, 31, 34, 37, 39 and 42-44 were previously cancelled.

***Response to Amendment***

4. The rejection of claims 24-25, 27, 32, 36, 38, 45-49, 51 and 53 under 35 USC §103(a) as being unpatentable over US Patent Application Publication No. US 2001/0021265 A1 to Wilson et al. in view of US Patent No. US 6,555,400 B2 to Farnworth et al. is withdrawn in light of Applicant's response.
5. The rejection of claims 28-30, 33, 35, 40-41, 50 and 52 under 35 USC §103(a) as being unpatentable over US Patent Application Publication No. US 2001/0021265 A1 to Wilson et al. and US Patent No. US 6,555,400 B2 to Farnworth et al., and further in view of US Patent Application Publication No. US 2002/0103563 to Izawa et al. is withdrawn in light of Applicant's response.

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 24-25, 27, 32, 36, 38, 45-49, 51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. US 2001/0021265 A1 to Wilson et al. in view of US Patent No. US 6,887,723 B1 to Ondricek et al.

The reference of prior art by Wilson et al. (hereinafter referred to as "Wilson") teaches of a method for assembling integrated circuit devices which includes the elements of the instant invention as stated herewith.

Claims 45, 46, 47, 48, 49, 51 and 53 are directed to a circuit substrate production method or system that comprise the production of a multi-piece substrate which includes a plurality of substrate pieces, wherein the multi-piece substrate is separated into a plurality of pieces at one or each of a plurality of separation levels (taught by Wilson in paragraph [0008], wherein dicing of the wafers is explained); the multi-piece substrate includes an information recording portion that includes information related to the multi-piece substrate, wherein each sheet is configured with an information recording portion that includes information related to the entire substrate and information related to the identification of the substrate sheet and where each substrate piece is configured with an information recording portion that includes information related to the entire multi-piece substrate, to a substrate sheet and piece; recording on the information recording portions referenceable management and manufacturing information related to the substrate manufacturer and the

mounting manufacturer; and delivering the multi-piece substrate board to the mounting manufacturer. Wilson teaches updateable/recordable and storable information regarding identification, management and manufacturing of the substrates in paragraph [0033] and in paragraphs [0020-0023] where how the information is recorded and updated throughout the assembly process is explained. With regard to the limitations of the recording means and read-out means as claimed by claim 47, Wilson teaches the use of bar codes or OCR codes for recording the identification information and uses bar code readers and/or OCR code readers for reading the stored information in paragraph [0037]. Wilson states in paragraph [0033] that both the carriers and the IC device comprise ID codes to identify their respective locations and the processing machines. Although the reference of prior art by Wilson teaches much of the limitations of the instant invention, Wilson fails to specifically point out the information in the information recording portion as being configured with information related to the substrate, sheet, and piece, i.e. the hierarchy of the devices including information on the recording portions, for this reason the prior art of Ondricek et al. (hereinafter referred to as "Ondricek") is relied upon. As depicted in Fig. 13A, the carrier or sheet (item 130) and the die or piece (item 12) include identification code ID which comprises information identifying the specific substrate as explained in column 10 at lines 53-67. When the teachings of Ondricek is combined with that of Wilson, the carrier and die, i.e. board and piece, include identification codes for identifying and holding information just as the sheet and piece of Ondricek is stated as doing, a hierarchy as claimed is presented. The carrier of Wilson being the board while the carrier and die of Ondricek being the sheet and piece as per the instant claim language allow for

each of the elements to comprise an identification means including information recording portions, EEPROM as present in the Ondricek invention, on the circuit element itself. The teaching of the hierarchy as per the claim limitations is interpreted as the substrate being taught by Wilson while the sheet and piece are taught in the Ondricek reference. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Wilson with that of Ondricek so as to enable a tracking label or identification code that permits the recording of information upon each level of the assembly of integrated circuits so that the elements can be tracked, located, handled or identified as a whole or individually without loss of any relevant information as stated by Ondricek in col. 1:ll. 21-24.

Claim 24 requires the information to be recorded as a two-dimensional code on the information recording portions. Wilson teaches this in paragraph [0023] wherein the use of optically-readable code, a two-dimensional code, is stated.

Claims 25, 32, 36, and 38 cite that in addition to the identification information of each of the substrates themselves, information related to a production step at the substrate manufacturer and information related to a production step at the mounting manufacturer are recorded on the information recording portions at the substrate manufacturer. In paragraph [0038], information related to the equipment and the substrates are stated as being included in the identification information.

Claim 27 is directed to the mounting of the substrate, specifically, at the mounting manufacturer, substrate mounting is performed based on the information which is read

from the information recording portions and is related to the production step. Wilson teaches the mounting process as the die attach step in paragraph [0035].

8. Claims 28-30, 33, 35, 40-41, 50 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. US 2001/0021265 A1 to Wilson et al. in view of US Patent No. US 6,887,723 B1 to Ondricek et al. as applied to claims 45-49, 51 and 53 above, and further in view of US Patent Application Publication No. US 2002/0103563 A1 to Izawa et al.

The limitations as taught by Wilson and Ondricek are stated heretofore.

Claims 50, 28, and 41 include the elements of claim 45 and further include a transmitting production information and identification information step wherein production step information about each of the substrates and the identification information read from the information recording portions are combined in the substrate manufacturer and the mounting manufacturer, are transmitted to a data processing center connected via a communication network, and are data-processed in the data processing center to thereby construct various databases, and wherein the substrate manufacturer and the mounting manufacturer perform required processing by retrieving required data from the databases via the communication network. The prior arts of Wilson and Ondricek teach the elements of the claimed limitations as aforementioned but fall short of teaching the information being transmitted to a data processing center via a communications network. As shown in Figs. 1 and 6 and stated in the abstract, the reference of Izawa et al. (hereinafter referred to as "Izawa") teach that a computer environment is used wherein a database stores processing

conditions and the computers of the equipment and manufacturers are able to communicate over a communication network. As for the transmission of information from both a substrate manufacturer and a mounting manufacturer, the decision of who transfers and what is transferred is wholly dependent upon the implementation of the system and the preference of the user. Moreover it is well known that with the presence of a communications link and a network, the amount and type of information that can be transferred is vast. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used network communication capabilities as per Izawa with the method and system of Wilson and Ondricek so as to enable direct transmission of data and information in a more efficient manner and to provide information automatically as stated in the abstract of Izawa.

Claims 29 and 33 further defines the steps of claims 46 and 47, wherein production step information about each of the substrates and the identification information read from the information recording portions are combined in the substrate manufacturer and the mounting manufacturer, are transmitted to a data processing center connected via a communication network, and are data-processed in the data processing center to thereby construct various databases, and wherein the substrate manufacturer and the mounting manufacturer perform required processing by retrieving required data from the databases via the communication network. The prior arts of Wilson and Ondricek teach the elements of the claimed limitations as aforementioned but fail to teach that the information is processed by a data processing center and has the ability to build other databases. As stated in paragraphs [0017] and [0050], Izawa teaches a computer environment wherein a



database is used and it is well known that numerous databases can be built to store and retrieve a variety of data processing conditions. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used multiple databases as is well known with the inventions of Wilson, Ondricek and Izawa so as to increase the ability of collecting more information and to provide the information automatically as stated in paragraph [0050] of Izawa.

Claims 30, 35, and 40 state the databases contain information about production histories at both the substrate manufacturer and the mounting manufacturer. Izawa teaches the use of production histories as described in the abstract and paragraph [0049].

Claim 52 is directed to a circuit substrate production method in which a substrate produced by a substrate manufacturer is delivered to a subsequent mounting manufacturer for mounting a component at the mounting manufacturer to thereby produce a circuit substrate, wherein when the substrate manufacturer records identification information on a substrate, which has an information recording portion configured such that identification information containing information related to management and manufacturing in each of the manufacturers is referenceable and recordable, and delivers the substrate to the mounting manufacturer, production step information related to the substrate and the identification information read from said information recording portion are combined at the substrate manufacturer and the mounting manufacturer, are transmitted to a data processing center connected via a communication network, and are data-processed in the data processing center to thereby construct various databases, and in that the substrate manufacturer and the mounting manufacturer perform required processing by retrieving

required data from the databases via the communication network. The limitations of claim 52 are parallel to that of claim 45 as taught above. In addition, claim 52 includes the limitations of claim 28 wherein the production information being transmitted to a data processing center via a communication network is stated. However, the prior arts of Wilson and Ondricek teach the elements of the claimed limitations as aforementioned but fail to teach the information being transmitted to a data processing center via a communications network. As shown in Figs. 1 and 6 and stated in the abstract, the reference of Izawa teaches a computer environment is used wherein a database stores processing conditions and the computers of the equipment and manufacturers are able to communicate over a communication network. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used network communication capabilities as per Izawa with the method and system of Wilson and Ondricek so as to enable direct transmission of data and information in a more efficient manner and to provide information automatically as stated in the abstract of Izawa.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 24-25, 27-30, 32-33, 35-36, 38, 40-41 and 45-53 have been considered but are moot in view of the new ground(s) of rejection.

The rejection of the instant claims over the prior arts is stated above. In response to Applicant's remarks/arguments, Applicant's statements regarding the limitations not being taught by Farnworth, stated on pages 4-5 of the response, are moot as the rejection of the claims over Farnworth has been withdrawn.

With regard to Applicant's argument that Izawa fails to "explicitly recite transmitting production information and identification information from a substrat manufacturer and from a mounting manufacturer to a data processing center" as per claim 50 on page 6 of the response, Examiner disagrees. As aforementioned, the transmission of information from both a substrate manufacturer and a mounting manufacturer including the production and identification information, the decision of who transfers and what is transferred is wholly dependent upon the implementation of the system and the preference of the user. Moreover it is well known that with the presence of a communications link and a network, the amount and type of information that can be transferred is vast. The reference of prior art to Izawa clearly teaches the transmission of information over a network, what is transferred and by whom it is transferred does not render the claimed limitations to be patentably distinct over the prior arts.

For the reasons stated above, the limitations of the instant invention are taught or fairly suggested by the prior arts of record; thereby, rendering the instant claims unpatentable.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela Rao whose telephone number is (571) 272- 3751. The examiner can normally be reached Monday - Wednesday from 9:00 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez, can be reached on (571) 272-3753. The fax number for the

organization where this application or any proceeding papers has been assigned is (571) 273- 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. It should be noted that status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see [http:// pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should any questions arise regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheela Rao/  
Examiner, Art Unit 2123  
November 18, 2009

/Paul L Rodriguez/  
Supervisory Patent Examiner, Art Unit 2123